

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 February 2004 (19.02.2004)

PCT

(10) International Publication Number
WO 2004/015027 A1

(51) International Patent Classification⁷: **C10B 43/08,**
B08B 9/093

(21) International Application Number:
PCT/CA2003/000541

(22) International Filing Date: 11 April 2003 (11.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2,397,509 12 August 2002 (12.08.2002) CA

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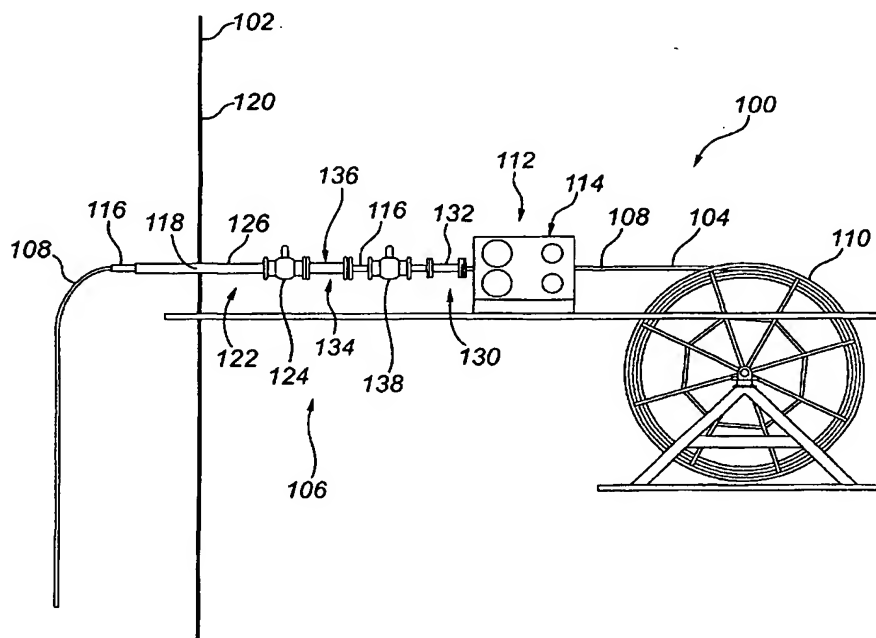
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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD,
SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US,
UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR CLEANING A COKER OR OTHER VESSEL



(57) Abstract: An apparatus and method for cleaning a vessel are disclosed. The vessel may include a coker for the extraction of crude oil, for example. The apparatus may include an elongated flexible conduit insertable through an elongated rigid conduit into the vessel, for conducting pressurized liquid into the vessel to clean the vessel. The apparatus preferably includes a sealing device for sealing a gap between the flexible conduit and the rigid conduit to prevent fluid from travelling through the gap.

WO 2004/015027 A1

WO 2004/015027 A1



Published:

— with international search report

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/C/00541

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C10B43/08 B08B9/093

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C10B B08B C10G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/046833 A1 (PERIO DUDLEY JOSEPH) 25 April 2002 (2002-04-25) paragraph '0004! - paragraph '0005! figure 1A ---	1-27
X	US 4 828 651 A (DAVIDSON MICHEL ET AL) 9 May 1989 (1989-05-09) column 2, line 13 -column 3, line 54 figure 1 ---	1-28, 34, 35
A	US 3 920 537 A (WALKER JOHN H) 18 November 1975 (1975-11-18) the whole document --- -/--	1-42

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

6 June 2003

Date of mailing of the international search report

17/06/2003

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/C/00541

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>MALLORY DONALD G ET AL: "Role of the vapour phase in fluid coker cyclone fouling: Part 1. Coke yields"</p> <p>CANADIAN JOURNAL OF CHEMICAL ENGINEERING, vol. 78, no. 2, April 2000 (2000-04), pages 330-336, XP008018068</p> <p>OTTAWA, CAN</p> <p>figure 1</p> <p>-----</p>	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/08/00541

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2002046833	A1	25-04-2002	US 6347664 B1	19-02-2002
US 4828651	A	09-05-1989	FR 2622596 A1	05-05-1989
US 3920537	A	18-11-1975	AU 8159675 A	16-12-1976
			BR 7503511 A	25-05-1976
			CA 1047426 A1	30-01-1979
			DE 2524570 A1	18-12-1975
			DK 250875 A , B ,	06-12-1975
			GB 1479860 A	13-07-1977
			JP 1174091 C	28-10-1983
			JP 51033769 A	23-03-1976
			JP 57038635 B	17-08-1982
			NL 7506698 A , C	09-12-1975
			NO 751904 A , B ,	08-12-1975
			SE 396766 B	03-10-1977
			SE 7506367 A	08-12-1975